WHAT IS CLAIMED IS:

1. A method for creating a dental model from a series of images of an intra-oral object, said method comprising the steps of:

(a) capturing a series of images of an intra-oral object from a plurality of capture positions, where the object includes common surface features and a control target arranged with respect to the object to provide control features;

(b) measuring the control features from the images of the control target included with the images of the object;

(c) analytically generating a 3-dimensional model of the object by photogrammetrically aligning the measurements of the control features, thereby providing a photogrammetrically aligned 3-dimensional model of the object while reducing image errors due to the variable orientations of the capture positions; and

(d) adjusting the photogrammetrically aligned 3-dimensional model of the object by aligning the common features of the model to like features on an image of the object, thereby producing an aligned dental model from the series of images.

2. The method as claimed in claim 1 wherein step (b) further includes the step of measuring the common features from the series of images of the object.

3. The method as claimed in claim 1 wherein step (c) comprises the steps of:

performing a photogrammetric adjustment; and

refining the photogrammetric adjustment by photogrammetrically projecting a 3-dimensional model of the image, determining misalignment of the control features and correcting the misalignment, thereby producing the photogrammetrically aligned 3-dimensional model of the object.

4. The method as claimed in claim 1 wherein step (d) comprises the steps of:

determining misalignment of the common features in the photogrammetrically aligned 3-dimensional model relative to the images of the

object by photogrammetrically projecting the model onto an image of the object; and

applying a 3-dimensional morphing algorithm to correct for the misalignment.

5. The method as claimed in claim 1 further comprising the step of using the aligned dental model to generate a dental restorative piece for the intra-oral object.

6. The method as claimed in claim 1 further comprising the steps of providing a database of generic 3-dimensional models and utilizing a selected one of the generic models in step (d) in the alignment of the common features of the aligned dental model to like features on the image of the object.

7. The method as claimed in claim 1 wherein the intra-oral object is one or more teeth.

8. The method as claimed in claim 7 wherein the control target is positioned around said one or more teeth.

9. A system for creating a dental model from a series of images of an intra-oral object, said system comprising:

a camera for capturing a series of images of an intra-oral object from a plurality of capture positions, where the object includes common surface features and a control target arranged with respect to the object to provide control features;

photogrammetric means for measuring the control features from the images of the control target included with the images of the object;

a digital processor including instructions for (a) analytically generating a 3-dimensional model of the object by photogrammetrically aligning the measurements of the control features, thereby providing a photogrammetrically aligned 3-dimensional model of the object while reducing image errors due to the variable orientations of the capture positions; and (b)

adjusting the photogrammetrically aligned 3-dimensional model of the object by aligning the common features of the model to like features on an image of the object, thereby producing an aligned dental model from the series of images.

10. The system as claimed in claim 9 wherein said photogrammetric means further measures the common features from the series of images of the object.

11. The system as claimed in claim 9 wherein said digital processor further includes instructions for performing a photogrammetric adjustment and refining the photogrammetric adjustment by photogrammetrically projecting a 3-dimensional model of the image, determining misalignment of the control features and correcting the misalignment, thereby producing the photogrammetrically aligned 3-dimensional model of the object.

12. The system as claimed in claim 9 wherein said digital processor further includes instructions for determining misalignment of the common features in the photogrammetrically aligned 3-dimensional model relative to the images of the object by photogrammetrically projecting the model onto an image of the object and applying a 3-dimensional morphing algorithm to correct for the misalignment.

13. The system as claimed in claim 9 further comprising fabrication apparatus using the aligned dental model to generate a dental restorative piece for the intra-oral object.

14. The system as claimed in claim 9 wherein the intra-oral object is one or more teeth.

15. The system as claimed in claim 14 wherein the control target is positioned around said one or more teeth.